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A NEW MARINE FISH LEECH *COTTOBDELLA EPSHTEINI* GEN. N., SP. N. (HIRUDINEA, PISCICOLIDAE) FROM THE SEA OF JAPAN

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Нова морська риб'яча п'явка *Cottobdella epshteini* gen. n., sp. n. (Hirudinea, Piscicolidae) з Японського моря. Утевський С. Ю. — *Cottobdella epshteini* gen. n., sp. n. описано з прибережних вод о-ва Попова: розмір дрібний; передній присосок дуже маленький; задній присосок витягнутий у довжину; соміт складається з 3 (13) кілець; дивертикули стравоходу наявні; сліпі мішки з п'ятьма отворами, злиті; 6 пар сім'яних мішків; копуляційна сумка довга; додаткові залози відсутні; яйцеві мішки довгі; провідна тканина і копуляційна зона відсутні. Живителі — керчаки.

Ключові слова: Hirudinea, Piscicolidae, *Cottobdella epshteini*, Японське море, керчаки.

A New Marine Fish Leech *Cottobdella epshteini* gen. n., sp. n. (Hirudinea, Piscicolidae) from the Sea of Japan. Utevsky S. Yu. — *Cottobdella epshteini* gen. n., sp. n. is described from coastal waters of Popov Island: size small, anterior sucker very small, posterior sucker much longer than wide, somite 3(13)-annulate, esophageal diverticula present, posterior crop caeca fused with 5 fenestrae, 6 pair of testisacs, bursa long, accessory glands absent, ovisacs long, conductive tissue and copulatory area absent. Host: sculpins.

Keywords: Hirudinea, Piscicolidae, *Cottobdella epshteini*, Sea of Japan, sculpins.

The marine fish leeches of the north-western Pacific are relatively well known (Oka, 1910; Vasilyev, 1939; Epshtein, 1962, 1967). Seven species of fish leeches have been recorded from the south-eastern part of the Sea of Okhotsk and the northern part of the Sea of Japan (Epshtein, 1967). However, the leech fauna of this region is more diverse than considered before. The leeches described herein were collected from the body surface of unidentified sculpins (Cottidae) in coastal waters of Popov Island, the Sea of Japan, Russia, on 20th and 26th August, 1967. The following description is based upon the examination of preserved specimens fixed in Bouin's fluid and upon complete series of transverse paraffin sections of mature individuals treated with Mallory's triple stain. In external description, a system model of the leech body developed by V. Epshtein (1989) is used. The specimens are deposited in the Schmalhausen Institute of Zoology, National Academy of Sciences of Ukraine, Kiev. All measurements are in millimetres.

Cottobdella S. Utevsky, gen. n.

Type species: *Cottobdella epshteini* S. Utevsky, sp. n. (see below)

D i a g n o s i s. Size small. Body elongate, cylindrical. Body surface smooth, lacking papillae, tubercles, gills, and pulsatile vesicles. Anterior sucker very small, indistinctly divided from trachelosome. Posterior sucker narrow. Complete somite 3(13)-annulate. Esophageal diverticula present. Posterior crop caeca fused with 5 fenestrae. Six pairs of testisacs. No accessory glands. Bursa long. Ovisacs long. No conductive tissue and copulatory area. Dorsal, ventral, and lateral lacunae present.

E t y m o l o g y. From *Cottus*, the type genus of the fish family Cottidae, and the Greek word *bdella*, a leech.

Cottobdella epshteini S. Utevsky, sp. n. (figs. 1–3).

M a t e r i a l. Holotype (No. 28), Russian Federation, Primorskiy Krai, ostrov Popova (Popov Is.) coastal waters, Sea of Japan, 20–26 August 1967; paratypes (No. 37), idem, two dissected individuals.

D i a g n o s i s. Average length, excluding suckers, 8.28 (range 6.00–10.0). Body almost imperceptibly divided into trachelosome and urosome. Mouthpore located prior to centre of anterior sucker. Clitellum 6-annulate. Crop caeca diamond-shaped. Intestine divided into well developed chambers. Number of testisacs may vary. Ovisacs closely clung together. Lateral lacunae muscularized.

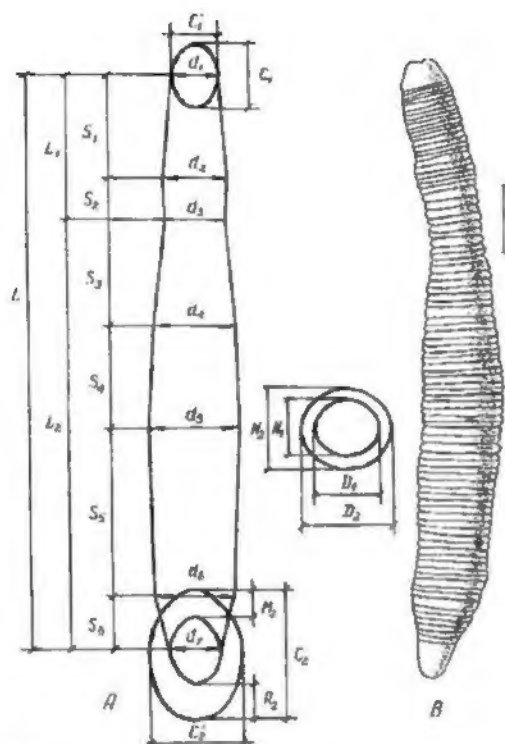


Fig. 1. *Cottobdella epshteini* gen. n., sp. n., holotype: A — model of body shape; B — dorsal view. Measurements: $C_1 = 0.83$; $C_1' = 0.69$; $C_2 = 1.90$; $C_2' = 1.20$; $d_1 = 0.69$; $d_2 = 0.90$; $d_3 = 0.85$; $d_4 = 1.15$; $d_5 = 1.25$; $d_6 = 1.13$; $d_7 = 0.70$; D_1 (maximum width of trachelosome) = 0.90; D_2 (maximum width of urosome) = 1.25; $L = 8.11$; $L_1 = 1.73$; $L_2 = 6.38$; $M_1 = 0.25$; $M_2 = 0.40$; N_1 (maximum thickness of trachelosome) = 0.83; N_2 (maximum thickness of urosome) = 1.18; $R_1 = 0.60$; $R_2 = 0.55$; $S_1 = 1.10$; $S_2 = 0.63$; $S_3 = 1.55$; $S_4 = 1.55$; $S_5 = 2.50$; $S_6 = 0.78$. Reference bar 1 mm.

Paratypes and other specimens. 334 *Cottobdella epshteini* specimens ranging in size from 6.00 to 10.00 have been examined. They resemble the holotype in body shape and somewhat differ in annulation. The following differences may occur: clitellar annuli 2 and 4 double, annuli 5 and 6 fused; postclitellar annuli 1, 2, and 4 double. The internal features are described upon paratypes and other specimens.

Digestive system. Proboscis extending to ganglion IV of ventral nerve cord. Esophageal diverticula located between ganglion IV and V. Crop divided into 6 diamond-shaped chambers. Posterior crop caeca

Description of the holotype. Size small. Total length, excluding suckers, 8.11. Maximum body width 1.25. Body elongate, cylindrical. Ratio of maximum body width to length 1:6.5. Body surface smooth, lacking papillae, tubercles, gills, and pulsatile vesicles. Trachelosome almost imperceptibly separated from urosome. Anterior sucker very small, indistinctly divided from trachelosome. Mouthpore located prior to centre of anterior sucker. Posterior sucker much longer than wide, distinctly divided from urosome, excentrically attached, not wider than maximum body width, and wider than anterior sucker. Clitellum 6-annulate. Male gonopore located between annuli 2 and 3. Female gonopore located between annuli 4 and 5. Clitellum followed by four clearly defined annuli. No copulatory area. Complete somite involves 3 annuli subdivided into 13 annuli (c_1-c_3 ; $d_{17}-d_{18}$; c_{10} ; $d_{21}-d_{22}$; c_{12}). Anus separated by 3 annuli from posterior sucker. Body unpigmented. No eyes and ocelli.

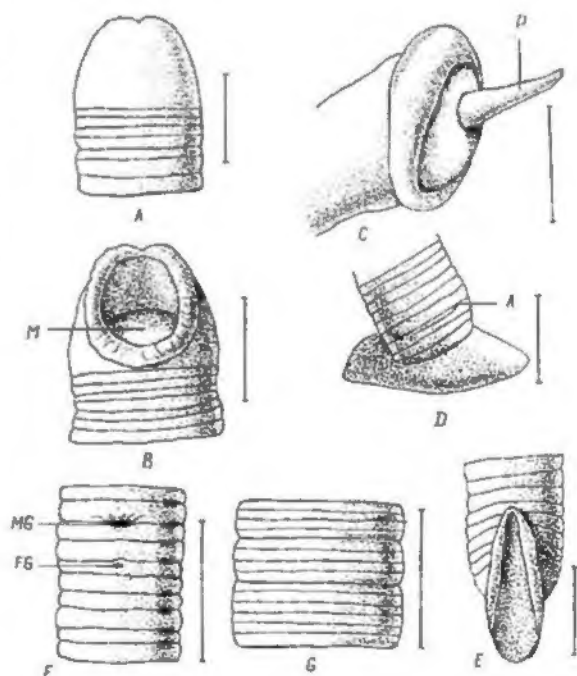


Fig. 2. External characters of *Cottobdella epshteini* gen. n., sp. n.: A — dorsal view of anterior sucker; B — ventral view of anterior sucker; C — lateral view of anterior sucker; D — lateral view of posterior sucker; E — ventral view of posterior sucker; F — ventral view of clitellum; G — dorsal view of mid-body somite (A — anus; FG — female gonopore; M — mouthpore; MG — male gonopore; P — proboscis). Reference bar 0.5 mm (A-C); 1 mm (D-G).

fused with 5 fenestrae. Intestine has 4 or 5 chambers. Rectum large.

Reproductive system. Six pairs of testisacs. Individual testisacs often missing. Seminal reservoirs extending to ganglion VII, enlarged, tightly coiled, continuing anteriorly and entering ejaculatory ducts which extend to ganglion IV. From here ejaculatory ducts bend posteriorly and enter round atrial cornua. Common atrium large. No accessory glands. Bursa long. Ovisacs long, extending to ganglion X, closely clung together. No conductive tissue.

Coelomic system. Dorsal, ventral, lateral lacunae present. Ventral lacuna enlarged at each ganglion in crop region. No main and accessory communications.

Discussion. The leech described herein belongs to the subfamily Platybdellinae because of the absence of pulsatile vesicles. It cannot be assigned to any of the existing genera. *Cottobdella* is somewhat similar to *Ostreobdella* Oka, 1927. The latter genus includes two species: *O. kakibir* Oka, 1927 and *O. papillata* Burreson, 1977. They have been recorded from the North Pacific. Only the external features of *O. kakibir* is known. Burreson (1977) provided the detailed description of *O. papillata*. The main character of the genus *Ostreobdella* is the large anterior sucker which is wider than the posterior sucker. *Cottobdella* resembles *Ostreobdella* in the small size, presence of 6 pairs of testisacs, large bursa, and absence of accessory glands, conductive tissue, and copulatory area. However, it is easily distinguished from *Ostreobdella* by the very small anterior sucker and narrow posterior sucker. In addition, *C. epshteini* lacks the posterior bursal pouch and extremely muscular layer of the atrial cornua which are present in *O. papillata* and has lateral lacunae in contrast to *O. papillata*.

E t y m o l o g y. Named in honour of Prof. Veniamin M. Epshtein (Benjamin M. Epstein) in recognition of his tangible contribution to hirudinology.

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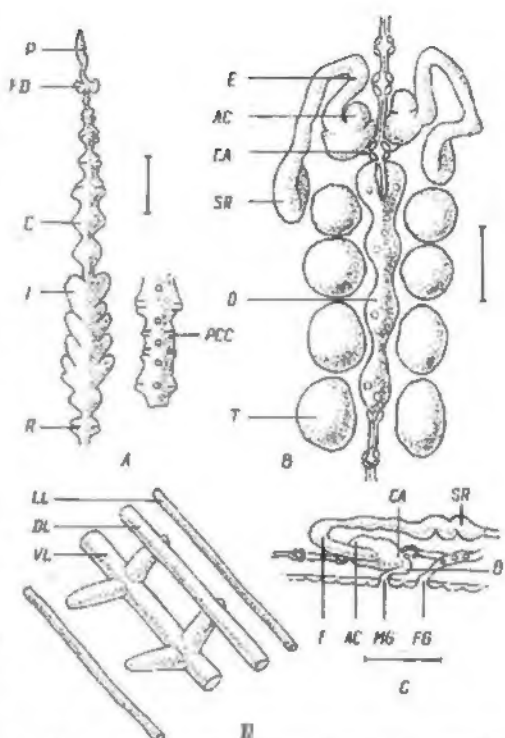


Fig. 3. Internal characters of *Cottobdella epshteini* gen. n., sp. n.: A — dorsal view of digestive system; B — dorsal view of reproductive system; C — lateral view of terminal genitalia reconstructed from serial sections; D — reconstruction of coelomic system based on serial sections (AC — atrial cornua; B — bursa; C — crop; CA — common atrium; DL — dorsal lacuna; E — ejaculatory duct; ED — esophageal diverticulum; FG — female gonopore; I — intestine; LL — lateral lacuna; MG — male gonopore; O — ovisacs; P — proboscis; PCC — posterior crop caecum; R — rectum; SR — seminal reservoir; T — testisac. Reference bar 1 mm (A); 0.5 mm (B, C).